

We claim:

- 5 1. A process for producing scratch-resistant coatings, encompassing the following steps:
- 10 - applying at least one UV-curable coating composition to at least one surface of an article to be coated, said coating composition comprising at least one polymer and/or oligomer P1 containing on average at least one ethylenically unsaturated double bond per molecule, and
- 15 - curing the coating composition by exposure to UV radiation,
- 20 which comprises conducting the curing of the coating composition under an oxygen-containing protective gas which has an oxygen partial pressure in the range from 0.2 to 18 kPa.
- 25 2. A process as claimed in claim 1, wherein the polymer and/or oligomer P1 has a double bond content in the range from 0.01 to 1 mol/100 g of P1.
- 30 3. A process as claimed in either of the preceding claims, wherein the number-average molecular weight of P1 is within the range from 400 to 10,000 daltons.
- 35 4. A process as claimed in any of the preceding claims, wherein the ethylenic double bonds in P1 are in the form of acrylate, methacrylate, acrylamido or methacrylamido groups.
- 40 5. A process as claimed in claim 4, wherein P1 is selected from urethane (meth)acrylates, polyester (meth)acrylates, oligoether (meth)acrylates, and epoxy (meth)acrylates.
- 45 6. A process as claimed in any of the preceding claims, wherein the UV-curable coating compositions comprise one or more reactive diluents in addition to P1.
7. A process as claimed in claim 6, wherein the reactive diluent is selected from compounds having one or two acrylate and/or methacrylate groups.
8. A process as claimed in any of the preceding claims, wherein the article to be coated is a three-dimensional structure.

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9. A process as claimed in any of the preceding claims, wherein that region of an installation in which the coating is cured by exposure to UV radiation is flushed with a protective gas.

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